



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

$$0 = c_m - (m+1) \frac{A_{m+1}}{(m+1)!}.$$

$$\therefore c_m = (m+1) \frac{A_{m+1}}{(m+1)!}, \text{ and } \phi(x) = \sum c_m x^m = A_1 + A_2 x + \frac{1}{2!} A_3 x^2 + \dots$$

$$+ \frac{1}{m!} A_{m+1} x^m.$$

$$\therefore \phi(x) = \frac{du}{u}. \quad \text{But } \phi(x) \equiv (1 - \frac{x^2}{2})(1-x)^{-1}. u = \frac{u}{2} [1+x + \frac{1}{1-x}].$$

$$\therefore \frac{du}{u} - \frac{dx}{2(1-x)} = (\frac{1}{2} + \frac{x}{2}) dx. \quad \text{Integrating, we obtain}$$

$$\log u + \frac{1}{2} \log(1-x) = \frac{x}{2} + \frac{x^2}{4} + c.$$

Now when $x=0$, $u=1$, and hence $c=0$.

$$\therefore \log[u(1-x)^{\frac{1}{2}}] = \frac{x}{2} + \frac{x^2}{4}.$$

C. N. Schmall should have received credit for solving 317.

MECHANICS.

357. Proposed by W. J. GREENSTREET, M. A., Stroud, England.

A portion of a circular cylinder cut off by two planes through the axis rests with its curved surface on two rough horizontal rails parallel to its axis, the coefficients of friction μ_1, μ_2 at upper and lower rails respectively. If the body is in limiting equilibrium at both rails when the plane through the axis and the center of gravity is perpendicular to both rails, find the distance of the center of gravity in terms of the distance between the rails, the inclination of their plane to the horizon, and the coefficients of friction.

358. Proposed by W. J. GREENSTREET, M. A., Stroud, England.

Two heavy particles connected by a string, length l , lie one on each of two inclined planes with common horizontal edge and of angles α and β . The inclination of the string to the edge varies as the inclination to the horizon of a simple pendulum of length $l(\sin \alpha + \sin \beta)$.

No solutions of these problems have been received.

259. Proposed by J. SCHEFFER, A. M., Hagerstown, Md.

A uniform beam of the weight W , rests on a horizontal plane, and leans against a vertical wall, but so as *not* to lie in a vertical plane. Denoting the pressure upon the horizontal and vertical planes, respectively, by x